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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/543,039

02/14/2006

Takashi Hirokawa

145085

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25944 7590 05/27/2010

OLIFF & BERRIDGE, PLC

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ALEXANDRIA, VA 22320-4850

EXAMINER

CHUI, MEI PING

ART UNIT

PAPER NUMBER

1616

NOTIFICATION DATE

DELIVERY MODE

05/27/2010

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/543,039	<b>Applicant(s)</b> HIROKAWA ET AL.	
	<b>Examiner</b> MEI-PING CHUI	<b>Art Unit</b> 1616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 26 June 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>01/12/2010</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Status of Action***

Receipt of Amendments/Remarks filed on 06/26/2009 is acknowledged. Claims 1-14 are pending in this application.

Upon further search and consideration, the examiner has new grounds of rejection. Accordingly, this Office Action is made non-final.

### ***Status of Claims***

Accordingly, claims 1-14 are presented for examination on the merits for patentability.

### ***New Grounds of Rejection***

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

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2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

**(1) Claims 1, 6-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Misselbrook, J. (U. S. Patent No. 4,511,395) in view of Becher et al. (U. S. Patent No. 6,908,882).**

***Applicants Claim***

Applicants claim an agricultural and horticultural water dispersible granule comprising: (i) an agricultural chemical compound having a melting of softening point 70 °C or below; (ii) an adsorbent carrier; (iii) a salt of N-acylamino acid; and additional constituents: (iv) formaldehyde condensates of aromatic sulfonates or lignosulfonates; and (v) N-acylmethyltaurate.

***Determination of the scope and content of the prior art***

***(MPEP 2141.01)***

Misselbrook, J. teaches a method of preparing water-dispersible granular and wettable powder compositions comprising high concentration of low melting pesticidal compounds and swelling hydrous aluminum silicate clays (column 2, lines 33-38).

Misselbrook, J. teaches that the water-dispersible granular composition comprises: (i) 50-70 % by weight of a low melting active compound of the formula (I), which have a melting point below 100 °C; (ii) 2-7.5 % by weight of N-methyl-N-oleoyltaurate as wetting agent; (iii) 2-6 % by weight of sodium lignin sulfonate or sodium

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salt of a naphthalene sulfonic acid-formaldehyde condensate as dispersing agent (column 8, claim 10).

More specifically, Misselbrook, J. teaches that the low melting pesticidal compounds used in the water-dispersible composition are dinitroaniline herbicides, i.e. N-(1-ethylpropyl)-2,6-dinitro-3,4-xylidine (commonly referred to as pendimethalin which has a melting point of 47-58 °C) or  $\alpha,\alpha,\alpha$ -trifluoro-2,6-dinitro-N,N-dipropyl-p-toluidine (commonly referred to as trifluralin which has a melting point of 48.5 °C) (column 3, Table 1).

Misselbrook, J. also teaches that because the dinitroaniline herbicides have melting points below 100 °C, they tend to cake, fuse or lump up when stored at or exposed to elevated temperatures due to the excessive softening or partial melting property; therefore, water-dispersible compositions generally would contain solid inert carrier, i.e. kaolin, montmorillonite, attapulgite, diatomaceous earth and hydrated sodium silicoaluminate. Misselbrook, J. further teaches that, besides the conventional solid insert carriers set forth above, natural swelling hydrous aluminum silicate clays (also referred to as bentonite clay) can be used to provide a free-flowing, non-agglomerate, non-lump up or fuse characteristics when stored or exposed to elevated temperature over a prolong period of time (column 1, lines 46-58; column 2, lines 27-41).

Misselbrook, J. also teaches that the water-dispersible granular composition contains the swelling clays exhibits superior dispersibility and disintegration property than those containing non-swelling clays (column 5-6, Table III and Table IV).

***Ascertainment of the difference between the prior art and the claims  
(MPEP 2141.02)***

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Misselbrook, J. does not teach the constituent N-acylamino acid, as claimed.

However, the deficiency is cured by Becher et al.

Becher et al. teach a herbicidal composition comprising a glyphosate herbicide and two surfactants, wherein the second surfactant is an anionic N-acyl derivative of an amino acid or a salt thereof (column 3, line 11-13). Becher et al. also teach that the composition can be a dry solid formulation, i.e. granule that is water-dispersible (column 7, line 51-54).

Becher et al. teach the second surfactant is in the form of an acid having a hydrophobic C<sub>8-24</sub>-acyl moiety derived from a fatty acid, i.e. lauroyl, myristoyl, palmitoyl, linoleoyl, linolenoyl, stearoyl or oleoyl, and the amino acid moiety of said N-acyl amino acid includes sarcosine, glutamic acid, alanine, aspartic acid, glycine, isoleucine, leucine and valine (column 6, lines 2-5, 15-16, 42, 48 and 59-61).

Becher et al. also teach that the composition can be formulated into a dry solid formulation, i.e. a water-dispersible granule or powder composition, and can help to enhance herbicidal activity of the herbicide (column 7, lines 51-55).

***Finding of prima facie obviousness Rational and Motivation***  
***(MPEP 2142-2143)***

It would have been obvious to a person of ordinary skilled in the art at the time the invention was made to combine the teachings of Misselbrook, J. with Becher et al. to arrive at the instant invention.

One of ordinary skill would have been motivated to incorporate an N-acylamino acid into the water-dispersible composition because they are suitable for use in a water-

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dispersible granular composition and can help to enhance the herbicidal activity of the composition, as suggested by Becher et al.

With respect to the amount of N-acylamino acid present in the composition, it would be dependent on the selected herbicide, based on the weight ratio as taught and suggested by Becher et al, and would have been obvious for normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages.

It is also noted that the instant claims are written using the transitional phrase “comprising”, which is fully open-ended and does not exclude additional, unrecited elements. Furthermore, the term “comprising” is a term of art used in claim language which means that the named elements are essential, but other elements may be added and still form a construct within the scope of the claim. Therefore, one of ordinary skill in the art when reading the prior art Becher et al. would recognize that the instant composition may comprise the specific claimed ingredients: (i) an agricultural technical compound having a melting point 70 °C or less; (ii) a salt of N-acylamino acid; (iii) an adsorbent carrier, and, if desired, may also comprise other unrecited elements, i.e. glyphosate, as taught by Becher et al.

From the teaching of the references, one of ordinary skill in the art would have had a reasonable expectation of success to arrive at the claimed invention. Therefore, the invention as a whole would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made.

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**(2) Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. (U. S. Patent No. 5,523,276) in view of Tanaka et al. (U. S. Patent No. 4701,210).**

***Applicants Claim***

Applicants claim an agricultural and horticultural water dispersible granule comprising: (i) an agricultural chemical compound having a melting or softening point 70 °C or below, i.e. esprocarb or pretilachlor; (ii) an adsorbent carrier, i.e. diatomaceous earths or clays; (iii) a salt of N-acylamino acid; and additional constituents: (iv) formaldehyde condensates of aromatic sulfonates or lignosulfonates.

***Determination of the scope and content of the prior art***

***(MPEP 2141.01)***

Suzuki et al. teach a stable herbicidal composition which comprises sulfamoylurea in combination with one or more low-melting or liquid herbicides. Advantageously, the herbicidal combination composition may be used to provide excellent control of a broad spectrum of grass and broadleaf weeds and sedge in the presence of growing, seeded or transplanted cereal crop plants, i.e. rice, wheat, barley, oats and rye, after prolonged storage (column 1, lines 43-54; column 9, claim 1). Suzuki et al. also teach that the low-melting herbicides are herbicidal compounds with a melting point of 60°C or less and can be present in an amount of 1-65% by weight, wherein the suitable low-melting or liquid herbicidal agents are: dinitroaniline herbicides, i.e. pendimethalin, trifluralin and the like; thiocarbamate herbicides, i.e. esprocarb and the like, and chloroacetamide herbicides, i.e. butachlor, pretilachlor, metolachlor, alachlor



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and the like (column 2, lines 11-19, 31-32; column 3, lines 2-3; column 9-10, claims 2, 6-16)..

Suzuki et al. the stable herbicidal composition can be formulated in any of the conventional dry forms such as dusts, dust concentrates, wettable powders, fine granulars, granulars, water dispersable granulars and the like utilizing agronomically acceptable adjuvants including carriers, i.e. clay, talc, diatomaceous earth, bentonite, calcium carbonate, and the like; surfactants, i.e. ionic surfactants: alkylsulfate, alkylarylsulfonate, alkylsulfate ester, ligninsulfonate, alkyl naphthalene sulfonate formalin condensate, sulfate of polyoxyethylene alkylaryl ether, alkylamine salt, dialkylsulfosuccinate, polycarbonate and the like (column 3, lines 6-59).

***Ascertainment of the difference between the prior art and the claims***

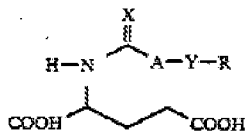
***(MPEP 2141.02)***

Suzuki et al. do not teach the constituent N-acylamino acid, as claimed. However, the deficiency is cured by Tanaka et al.

Tanaka et al. teach a composition comprising a novel N-substituted glutamic acid phenoxy type herbicide, which provides no or very little undesirable side effects on important cereal crops including rice, wheat, barley and the like, exhibits a selective herbicidal effect on monocotyledons or broad-leaved plants and is stable when applied. It also has a weak toxicity for humans and domestic animals; and therefore, it can be widely used as an agricultural chemical (column 1, lines 9-13, 44-52; column 4, lines 22-27; column 13, lines 3-7).

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Tanaka et al. teach that the N-substituted glutamic acid phenoxy type herbicide has the general formula (I) as represented below:



, wherein X and Y can be an oxygen atom; A represents a methylene group, an ethylene group and R represents a substituted phenyl group, a naphthyl group (C<sub>10</sub>) (column 2, lines 1-19).

Tanaka et al. also teach that the N-substituted glutamic acid herbicide can be used with a solid carrier, i.e. clay or diatomaceous earth, and can be formulated into wettable powders, granules or the like, in an amount of be 0.5 – 90 % by weight of the formulation. If necessary, additional ingredients, i.e. an emulsifying agent, suspending agent, dispersing agent or the like, and another kind of herbicide, insecticide, plant-growth regulator or the like, can be included (column 4, lines 28-48).

### ***Finding of prima facie obviousness Rational and Motivation***

***(MPEP 2142-2143)***

It would have been obvious to a person of ordinary skilled in the art at the time the invention was made to combine the teachings of Suzuki et al. with Tanaka et al. to arrive at the instant invention.

One of ordinary skill would have been motivated to include a suitable amount of N-substituted glutamic acid herbicide into a herbicidal composition which comprises one or more low-melting of liquid herbicides because when both herbicides (N-substituted glutamic acid herbicide and a low-melting herbicide) are combined, they both can

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provide excellent control of a broad spectrum of monocotyledons and broadleaf weeds for protecting cereal crop plants, i.e. rice, wheat, barley, oats and rye, as taught by Suzuki et al. and Tanaka et al.. Therefore, it would provide the motivation for one of ordinary skill in the art to combine these two herbicides into a new herbicidal formulation for use in weed control purpose.

From the teaching of the references, one of ordinary skill in the art would have had a reasonable expectation of success to arrive at the claimed invention. Therefore, the invention as a whole would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made.

**(3) Claims 1-3, 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ogawa et al. (U. S. Patent No. 5,945,114) in view of Tanaka et al. (U. S. Patent No. 4701,210).**

***Applicants Claim***

Applicants claim an agricultural and horticultural water dispersible granule comprising: (i) an agricultural chemical compound having a melting or softening point 70 °C or below; (ii) an adsorbent carrier, i.e. attapulgite or clays; (iii) a salt of N-acylamino acid; and additional constituents: (iv) formaldehyde condensates of aromatic sulfonates or lignosulfonates.

***Determination of the scope and content of the prior art***

***(MPEP 2141.01)***

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Ogawa et al. teach a water-dispersible granule comprising a pesticide having a melting point not more than 70 °C, a carrier and a surface-active agent, and the granule has superior physical properties, i.e. disintegration-in-water, dispersibility, suspensibility and storage stability, and is free of scaling off, collapse of the particles (column 1, lines 45-54, 60-64; column 3, line 12-13; column 6, lines 43-48; column 13, line 35 to column 14, line 3).

More specifically, Ogawa et al. teach that the low melting pesticide has a melting point in a range of 0 °C to 70 °C, i.e.  $\alpha,\alpha,\alpha$ -trifluoro-2,6-dinitro-N,N-dipropyl-p-toluidine (also referred as trifluralin which melting point is 48.5 °C), and can be present in the water-dispersible granule in an amount of 5-50 % by weight (column 2, lines 47-48; column 5, lines 16, compound 66; lines 25-26).

Ogawa et al. teach that the water-dispersible granule can also include a surface active agent that can emulsify and disperse the pesticide. Example such as the anionic surfactant, i.e. sodium salt of naphthalenesulfonic acid/formalin condensate or lignosulfonates, and it can be present in an amount of 5 to 30 %, preferably 6 to 20 %, by weight based on the weight of said water dispersible granule ((column 2, line 27, 30-31, 43-46).

Ogawa et al. further teach that mineral carrier, i.e. clays, diatomite or attapulgite, can be included in the water dispersible granule in an amount between 0.1 to 85 % by weight based on the weight of the granule (column 3, lines 12-17).

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In addition, Ogawa et al. teach that the water-dispersible granule can also include a pesticide having a melting point higher than 70 °C, depending upon uses (column 5, lines 41-46).

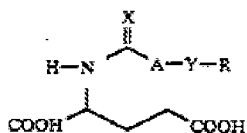
*Ascertainment of the difference between the prior art and the claims*

*(MPEP 2141.02)*

Ogawa et al. do not teach the constituent N-acylamino acid, as claimed. However, the deficiency is cured by Tanaka et al.

Tanaka et al. teach a composition comprising a novel N-substituted glutamic acid phenoxy type herbicide, which provides no or very little undesirable side effects on important cereal crops including rice, wheat, barley and the like, exhibits a selective herbicidal effect on monocotyledons or broad-leaved plants and is stable when applied. It also has a weak toxicity for humans and domestic animals; and therefore, it can be widely used as an agricultural chemical (column 1, lines 9-13, 44-52; column 4, lines 22-27; column 13, lines 3-7).

Tanaka et al. teach that the N-substituted glutamic acid phenoxy type herbicide has the general formula (I) as represented below:



, wherein X and Y can be an oxygen atom; A represents a methylene group, an ethylene group and R represents a substituted phenyl group, a naphthyl group (C<sub>10</sub>) (column 2, lines 1-19).

Tanaka et al. also teach that the N-substituted glutamic acid herbicide can be used with a solid carrier, i.e. clay or diatomaceous earth, and can be formulated into wettable

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powders, granules or the like, in an amount of be 0.5 – 90 % by weight of the formulation. If necessary, additional ingredients, i.e. an emulsifying agent, suspending agent, dispersing agent or the like, and another kind of herbicide, insecticide, plant-growth regulator or the like, can be included (column 4, lines 28-48).

***Finding of prima facie obviousness Rational and Motivation***  
***(MPEP 2142-2143)***

It would have been obvious to a person of ordinary skilled in the art at the time the invention was made to combine the teachings of Ogawa et al. with Tanaka et al. to arrive at the instant invention.

One of ordinary skill would have been motivated to include an additional herbicide that has a melting point higher than 70 °C, i.e. a N-substituted glutamic acid herbicide taught by Tanaka et al., in combination with one or more low-melting of liquid herbicides because the prior art Ogawa et al. suggest that the water-dispersible granule can further include a pesticide having a melting point higher than 70 °C if desired, depending upon the specific uses. Therefore, it would have been obvious to one of ordinary skill in the art to try adding an additional herbicide into the water-dispersible granule for the same purpose of weed control, dependent on the type of unwanted vegetation and the selected pesticide.

From the teaching of the references, one of ordinary skill in the art would have had a reasonable expectation of success to arrive at the claimed invention. Therefore, the invention as a whole would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made.

***Response to the Arguments and Declaration***

Applicants' arguments and Declaration under 37 C.F.R. 1.132 filed on 06/26/2009, with respect to the rejections of claims 1-14 under 35 U.S.C. 103(a), have been fully considered and are persuasive. Therefore, the previous rejections have been withdrawn. However, upon further consideration and search, a new ground(s) of rejection is made in view of different interpretation of the previously applied reference and newly found prior art reference(s).

***Conclusion***

No claims are allowed.

***Contact Information***

Any inquiry concerning this communication from the Examiner should direct to Helen Mei-Ping Chui whose telephone number is 571-272-9078. The examiner can normally be reached on Monday-Thursday (7:30 am – 5:00 pm). If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor Johann Richter can be reached on 571-272-0646. The fax phone number for the organization where the application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either PRIVATE PAIR or PUBLIC PAIR.

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Status information for unpublished applications is available through PRIVATE PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the PRIVATE PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/H. C./

Examiner, Art Unit 1616

*/Mina Haghighatian/*  
Primary Examiner, Art Unit 1616